

The Angiosperm Flora of Singapore Part 2

PHILYDRACEAE

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Philydrum Banks & Sol. ex Gaertn

Fruct. sem. pl. 1 (1788) 62, t. 16; Ridl., Fl. Malay Penins. 4 (1924) 347; Skotts., Bull. Jard. bot. Etat Brux. ser. 3, 13: (1933) 111; Skotts., Fl. Males. ser. 1, 4:1(1948) 5.

Erect, perennial, caespitose herbs with a short rhizome. *Leaves* densely rosulate, equitant, 2-ranked; linear, fleshy, parallel-veined, sheathing at base. *Inflorescence* a simple or paniculate terminal spike; scape 1 m or longer, with few cauline leaves gradually replaced by alternate bracts. *Flowers* bisexual; zygomorphic; sessile, solitary in axil of spathaceous bracts; bracts enclosing flower buds, reflexed at anthesis, later embracing the fruit; perianth corolline, 4-segmented, 2-seriate, persistent as fruit cover, yellow, 2 outer tepals larger, adaxial and abaxial respectively, 2 inner tepals smaller, lateral; stamen single, filament flattened, adnate with base of inner and adaxial tepals, anther dorsifixed, 2-loculate, spirally twisted, extrorse, opening lengthwise by slits, pollen grains in tetrads, staminodes cuneate, acute, shorter than fertile stamen; ovary single, superior, 3-loculate, with parietal placentation, ovules many per locule, anatropous; style simple. *Fruit* a persistent triangular-oblong loculicidal capsule with 3 valves. *Seeds* with corona and spirally-striate testa, many per locule; embryo straight.

Distribution - Monotypic genus, occurring in South Japan, Taiwan, South-East China, Indo-China, Malay Peninsula, Guam, South New Guinea and North, East and South-East Australia (Hamann, 1966a). *P. lanuginosum* is reported to be extinct in Singapore (Keng, 1987) but was previously collected in Bedok.

Ecology - *P. lanuginosum* occurs in freshwater ponds, marshes and ricefields at low altitudes in its natural range (Skottsberg, 1948).

Uses - *P. lanuginosum* has no known economic importance.



Fig. 1. *Philydrum lanuginosum* Banks & Sol. ex Gaertn. a. Habit. b. Flower with one lateral tepal removed. c. Flower with carpel and adaxial tepal removed. d. Stamen, with spirally twisted anthers. e. Carpel. f. Ovary (transverse section), with parietal placentation. g. Seed, with spirally striate testa. [a. H.N. Ridley 5907 (SING); b.-g. drawn from fresh material. Scale bars: a = 2 cm, b - e = 2 mm; f = 1 mm; g = 0.25 mm.] Del. R.J. Nicholls.

Notes - The most comprehensive account of the Philydraceae is by Hamann (1966a), who studied various aspects of taxonomic relevance, including morphology, anatomy and embryology. The embryology has been the subject of considerable research (Hamann, 1963, 1966a, 1966b; Kapil and Walia, 1965), and has assisted with the clarification of the phylogenetic relationships of the family. Similarities are apparent with the Pontederiaceae and Haemodoraceae, although a relationship with the Burmanniaceae has also recently been suggested.

1. *P.lanuginosum* Banks & Sol. ex Gaertn

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Leaves 40-80 cm long (including basal sheath), glabrous, thick, aerenchymatous; sheath 14-30 by 1-1.5 cm. *Inflorescence* 20-60 cm long; scape slender, terete, glabrate below, villous towards the flowers; bracts ovate to subulate, 2-10 by 0.75-1 cm, woolly on abaxial side, short-acuminate to attenuate. *Flowers* with thin perianth, outer tepals 10-15 by c. 10 mm, many-veined, long villous outside, the upper with 2 stronger veins and bidentate, acute, margins inflexed, inner tepals spathulate, c. 8 by 2 mm, membranous, 3-veined, with base hairy outside; stamen c. 9 mm long, glabrous, anther \pm spherical; ovary densely long-woolly; style glabrous; stigma broad-triangular, long-papillose. *Fruit* 9-12 by 4-5 mm. *Seeds* dark reddish-brown, bulb-shaped, c. 1 mm long; $n = 8$ (Hamann, 1966a) and $2n = 16$ (Briggs, 1966).

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